

REMARKS

The application has been carefully reviewed in light of the final Office Action dated July 7, 2009. Claims 11, 12, 15 and 18 to 20 are in the application, with Claims 11, 19 and 20 being independent. Reconsideration and further examination are respectfully requested.

In the Office Action, Claims 11, 12, 18, 19 and 20 were rejected under 35 U.S.C. § 103(a) over U.S. Patent Application Publication No. 2002/0122194 (Kuwata) in view of U.S. Patent No. 6,198,553 (Yamamoto) and U.S. Patent No. 6,148,092 (Qian), and further in view of U.S. Patent No. 7,274,400 (Hyodo). Claim 15 was rejected under 35 U.S.C. § 103(a) over Kuwata in view of Yamamoto, Qian and Hyodo, and further in view of U.S. Patent No. 6,975,437 (Takemoto). These rejections are respectfully traversed.

Independent Claim 11 generally concerns an image processing method. The method includes the steps of obtaining image data and photographing mode information of the image data, and determining whether or not a photographing mode is a person photographing mode, based on the photographing mode information. The method further includes the steps of selecting a color space conversion condition from among plural color space conversion conditions, including first and second color space conversion conditions, in accordance with the determination result obtained in said determining step, and performing, to the obtained image data, color space conversion of converting luminance/color difference data into RGB data, using the selected color space conversion condition. A first RGB color space corresponding to the first color space conversion condition is different from a second RGB color space corresponding to the second color space conversion condition, the second RGB color space having a color gamut wider than

that of the first RGB color space. In a case where it is determined that the photographing mode is the person photographing mode, the first color space conversion condition is selected. The number of bits of the image data converted by using the first color space conversion condition is the same as the number of bits of the image data converted by using the second color space conversion condition. The photographing mode is a mode which corresponds to photographing an object by a digital camera to generate the image data, and which includes the person photographing mode and a scene photographing mode.

Thus, among its many features, Claim 1 provides that (i) a first RGB color space corresponding to the first color space conversion condition is different from a second RGB color space corresponding to the second color space conversion condition, the second RGB color space having a color gamut wider than that of the first RGB color space, (ii) in a case where it is determined that the photographing mode is the person photographing mode, the first color space conversion condition is selected, and (iii) the number of bits of the image data converted by using the first color space conversion condition is the same as the number of bits of the image data converted by using the second color space conversion condition.

By virtue of foregoing features (i) to (iii), it is possible to control color space conversion so as to satisfactorily reproduce tonality, even if a user does not issue a specific instruction for the color space conversion.

For example, Figure A in the attached Exhibit illustrates example aspects where using a wider color gamut can affect tonality of an image. In this example, it can be assumed that there is a one-dimensional image having eight tonalities which can correspond to three bits.

In case (1) of Figure A, the number of tonalities is 8, the color gamut is wide, and the quantization intervals are wide. On the other hand, in case (2), the number of tonalities is 8, the color gamut is narrow, and the quantization intervals are narrow.

Regarding color reproducibility, in case (1), brighter color can be reproduced as compared with case (2). In case (2), if a certain color exceeds the color gamut, the relevant color can be clipped to the maximum color in the color gamut. However, in the color gamut of case (2), the tonalities can be reproduced in higher quality as compared with case (1).

Assuming that the number of tonalities in case (1) is the same as that in case (2), case (1) may be more appropriate if reproduction of bright colors is emphasized. On the other hand, if the tonality of the portion of which the color is not bright is emphasized, case (2) can be more appropriate.

Furthermore, reference is made to Figure B in the attached Exhibit. In this regard, the color gamut of the sRGB color space is typically different from the color gamut of the xRGB color space, which can include Wide Gamut RGB color space and Adobe RGB color space. In a person photographing mode, the tonality of a flesh color can be emphasized, and the flesh color can be within the color gamut of the sRGB color space. Accordingly, it may be more appropriate to use the sRGB color space rather than the xRGB color space in the person photographing mode.

Of course, it should be noted that the above discussion with reference to Figures A and B in the attached Exhibit correspond to example aspects, and Claim 1 is not limited as such.

Turning to the applied references, Kuwata, Yamamoto, Qian, Hyodo and Takemoto are not seen to disclose or suggest at least the features that (i) a first RGB color space corresponding to the first color space conversion condition is different from a second RGB color space corresponding to the second color space conversion condition, the second RGB color space having a color gamut wider than that of the first RGB color space, (ii) in a case where it is determined that the photographing mode is the person photographing mode, the first color space conversion condition is selected, and (iii) the number of bits of the image data converted by using the first color space conversion condition is the same as the number of bits of the image data converted by using the second color space conversion condition.

As understood by Applicant, Kuwata discloses a system in which an sRGB color space and an NTSC color space are selectively used according to a type of camera. See Kuwata, paragraph [0055]. In addition, input image data in a YCbCr space is converted into an RGB space used in shooting, where the RGB space can be seen to correspond with the selected sRGB color space or NTSC color space. See Kuwata, S14 in Figure 3.

However, Kuwata is not seen to disclose or suggest foregoing features (i) to (iii), nor the attendant benefits provided thereby.

Yamamoto is not seen to compensate for the deficiencies of Kuwata. In this regard, Yamamoto is seen to disclose that RGB values are calculated from toner density information, and the calculated RGB values are displayed on a monitor. In addition, Yamamoto is seen to disclose that, when the calculated RGB values are displayed on the monitor, these values are converted into eight-bit NTSC signals.

As such, Yamamoto may be seen to suggest eight-bit to eight-bit conversion. However, Yamamoto, is not seen to disclose or suggest foregoing features (i) to (iii), nor the attendant benefits provided thereby.

In addition, Qian, Hyodo and Takemoto have been reviewed, and are not seen to compensate for the deficiencies of Kuwata and Yamamoto. In particular, Qian, Hyodo and Takemoto are not seen to disclose or suggest foregoing features (i) to (iii), nor the attendant benefits provided thereby.

Claim 11 is therefore believed to be allowable over the applied references.

In addition, independent Claims 19 and 20 are apparatus and storage medium claims, respectively, which generally correspond to method Claim 11. Accordingly, Claims 19 and 20 are believed to be allowable for the same reasons.

The other claims in the application are each dependent from the independent claims and are believed to be allowable over the applied reference for at least the same reasons. Because each dependent claim is deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

No other matters being raised, it is believed that the entire application is fully in condition for allowance, and such action is courteously solicited.

No fees are believed due; however, should it be determined that additional fees are required, the Director is hereby authorized to charge such fees to Deposit Account 06-1205.

Finally, Applicant respectfully requests that the Examiner conduct a personal or telephonic interview with Applicant's representative regarding this case, before

the Examiner takes this filing into consideration. Applicant respectfully requests that the Examiner contact Applicant's representative as indicated below.

Applicant's undersigned attorney may be reached in our Costa Mesa, California office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

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EXHIBIT

Figure A



Figure B

